SPECIAL STILLING BASIN 1630.06

A Special Stilling Basin is commonly used when the dewatering of a work area is necessary and construction of a stilling basin is not feasible. It is a bag made of a nonwoven fabric lying on a bed of sediment control stone. As effluent from the work area is pumped into the special stilling basin, water is slowly filtered out through the walls of the bag, leaving sediment trapped inside.

AREAS OF USE:

- Sites where the excavation needed for construction of a stilling basin is not possible.
- Work areas where the effluent can be pumped out at a rate of 1500 gallons per minute or less.
- Sites where the dewatering volume is small.
- Areas where the construction activities will not require an extended period of time.
- Around bridges with drilled pier construction where effluent will be pumped from the drilled shafts.

CONSTRUCTION SPECIFICATIONS:

- The bag shall be placed on a rock pad constructed of at least 8 inches of sediment control stone.
- The rock pad should extend at least one foot past the bag on all sides.
- The special stilling basin shall be placed so that incoming water flows into and through the bag without causing erosion.
- The spout of the bag should be tied off tightly to prevent leaking.
- Place special stilling basin on level ground.
- When being utilized in drilled pier construction, the special stilling basin should be constructed such that it is portable and can be used adjacent to each drilled pier.

MATERIAL SPECIFICATIONS:

- The bag shall be constructed of a nonwoven fabric with seams sewn with a double needle machine using a high strength thread and have a sewn-in spout for receiving pump discharge.
- Seams shall have wide width strength of at least 60 lb./in. (using test method ASTM D-4884).
- The filter fabric shall meet the requirements of Section 1056 of the Standard Specifications for Type 2 Fabric.
- Sediment control stone shall be #5 or #57 stone that meets the requirements of Section 1005 of the Standard Specifications for these stone sizes.

- The fabric to construct the bag must meet the following specifications:

Property	Test Method	Units	Minimum Specifications
Weight	ASTM D-3776	oz/yd	8
Grab tensile	ASTM D-4632	lb	200
Puncture	ASTM D-4833	lb	130
Flow rate	ASTM D-4491	gal/min/sf	80
Permittivity	ASTM D-4991	1/sec	1.5
UV Resistance	ASTM D-4355	%	70

PAYMENT:

- Installation of measure:

Filter Fabric for Drainage	Square Yard
Sediment Control Stone	Ton
Special Stilling Basin	EA

MAINTENANCE:

- The bag shall be disposed of and replaced when it is ¾ full of sediment or when it is impractical for the bag to filter the sediment out at a reasonable flow rate.
- The inlet of the bag should be inspected periodically for damage and/or blockage.
- Sediment control stone shall be replaced if washed away by high flows or bag failure.

TYPICAL PROBLEMS:

- Site conditions requiring too much flow to be pumped into the special stilling basin that causes the bag to burst.
- The bag is not placed on level ground causing it to roll once water is pumped into it and it inflates.
- Continuing use when bag is full.
- Spout becoming damaged or disconnected from the inlet pipe or hose.